

PATENT COOPERATION TREATY

JPW

From the INTERNATIONAL SEARCHING AUTHORITY

To: JOHN P. WHITE
COOPER & DUNHAM LLP
1185 AVENUE OF THE AMERICAS
NEW YORK NY 10036

PCT

NOTIFICATION OF TRANSMITTAL OF THE INTERNATIONAL SEARCH REPORT OR THE DECLARATION

(PCT Rule 44.1)

received
11/18/2000

RECEIVED
COOPER & DUNHAM

AUG 17 2000

DOCKET CLERK

Date of Mailing
(day/month/year)

11 AUG 2000

Applicant's or agent's file reference

(54205-C-PCT)

FOR FURTHER ACTION See paragraphs 1 and 4 below

International application No.

PCT/US00/13197

International filing date
(day/month/year)

12 MAY 2000

Applicant

THE TRUSTEES OF COLUMBIA UNIVERSITY IN THE CITY OF NEW YORK

1. ☒ The applicant is hereby notified that the international search report has been established and is transmitted herewith.

Filing of amendments and statement under Article 19:

The applicant is entitled, if he so wishes, to amend the claims of the international application (see Rule 46):

When? The time limit for filing such amendments is normally 2 months from the date of transmittal of the international search report; however, for more details, see the notes on the accompanying sheet.

Where? Directly to the International Bureau of WIPO
34, chemin des Colombettes
1211 Geneva 20, Switzerland
Facsimile No.: (41-22) 740.14.35

10/11/2000 W.D
IDS: 11/11/2000
(54205, 54205-A-PCT-US,
54205-B) W.D

For more detailed instructions, see the notes on the accompanying sheet.

2. ☐ The applicant is hereby notified that no international search report will be established and that the declaration under Article 17(2)(a) to that effect is transmitted herewith.

3. ☐ With regard to the protest against payment of (an) additional fee(s) under Rule 40.2, the applicant is notified that:

- ☐ the protest together with the decision thereon has been transmitted to the International Bureau together with the applicant's request to forward the texts of both the protest and the decision thereon to the designated Offices.
- ☐ no decision has been made yet on the protest; the applicant will be notified as soon as a decision is made.

4. **Further action(s):** The applicant is reminded of the following:

Shortly after 18 months from the priority date, the international application will be published by the International Bureau. If the applicant wishes to avoid or postpone publication, a notice of withdrawal of the international application, or of the priority claim, must reach the International Bureau as provided in rules 90 bis 1 and 90 bis 3, respectively, before the completion of the technical preparations for international publication.

Within 19 months from the priority date, a demand for international preliminary examination must be filed if the applicant wishes to postpone the entry into the national phase until 30 months from the priority date (in some Offices even later).

Within 20 months from the priority date, the applicant must perform the prescribed acts for entry into the national phase before all designated Offices which have not been elected in the demand or in a later election within 19 months from the priority date or could not be elected because they are not bound by Chapter II.

Name and mailing address of the ISA/US
Commissioner of Patents and Trademarks
Box PCT
Washington, D.C. 20231

Facsimile No. (703) 305-3230

Authorized officer
LISA V. COOK

Telephone No. (703)308-0196

Joyce Bridges
for

Form PCT/ISA/220 (July 1998)*

(See notes on accompanying sheet)

Applicant: John O'Connor, et al.
Serial No: 09/017,976
Filed: February 3, 1998

Exhibit B

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference 54205-C-PCT	FOR FURTHER ACTION	see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.
International application No. PCT/US00/13197	International filing date (day/month/year) 12 MAY 2000	(Earliest) Priority Date (day/month/year) 13 MAY 1999
Applicant THE TRUSTEES OF COLUMBIA UNIVERSITY IN THE CITY OF NEW YORK		

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 4 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

- a. With regard to the language, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

- b. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international search was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

2. ☐ Certain claims were found unsearchable (See Box I).

3. ☐ Unity of invention is lacking (See Box II).

4. With regard to the title,

- ☒ the text is approved as submitted by the applicant.
- ☐ the text has been established by this Authority to read as follows:

5. With regard to the abstract,

- ☒ the text is approved as submitted by the applicant.
- ☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the drawings to be published with the abstract is Figure No. 1

- ☐ as suggested by the applicant.
- ☒ because the applicant failed to suggest a figure.
- ☐ because this figure better characterizes the invention.
- ☐ None of the figures.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US00/13197

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : Please See Extra Sheet.

US CL : Please See Extra Sheet.

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : Please See Extra Sheet.

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

EAST and WEST Patent Database, STN-biosis, caplus, haplus, medline.

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X,P	WO 99/41584 A2 (THE TRUSTEES OF COLUMBIA UNIVERSITY IN THE CITY OF NEW YORK) 19 August 1999, see full document.	1-66
X	BIRKEN, S. et al. Development and Characterization of Antibodies to a Nicked and Hyperglycosylated Form of hCG from a Choriocarcinoma Patient. Endocrine. April 1999, Vol. 10, No. 2, pages 137-144, see abstract.	1-66
Y	KOVALEVSKAYA, G. et al. Evaluation of Nicked Human Chorionic Gonadotropin Content in Clinical Specimens by a Specific Immunometric Assay. Clinical Chemistry. January 1999, Vol. 45, No. 1, pages 68-77, see abstract.	1-66



Further documents are listed in the continuation of Box C.



See patent family annex.

* Special categories of cited documents:	*T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
A document defining the general state of the art which is not considered to be of particular relevance	*X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
B earlier document published on or after the international filing date	*Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
L document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	*G* document member of the same patent family
O document referring to an oral disclosure, use, exhibition or other means	
P document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search

21 JUNE 2000

Date of mailing of the international search report

11 AUG 2000

Name and mailing address of the ISA/US
Commissioner of Patents and Trademarks
Box PCT
Washington, D.C. 20231

Facsimile No. (703) 305-3230

Authorized officer

LISA V. COOK

Telephone No. (703)308-0196

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US00/13197

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	COLE, L. A. et al. The Heterogeneity of Human Chorionic Gonadotropin (hCG). III. The Occurrence and Biological and Immunological Activities of Nicked hCG. Endocrinology. 1991, Vol. 129, No. 3, pages 1559-1567, see full document.	1-37, 42, and 44-57
Y	BERGER, P. et al. Variants of Human Chorionic Gonadotropin from Pregnant Women and Tumor Patients recognized by Monoclonal Antibodies. Journal of Clinical Endocrinology and Metabolism. 1993, Vol. 77, No. 2, pages 347-351, see full document.	1-66
Y	ACEVEDO, H.F. et al. Expression of Membrane-associated Human Chorionic Gonadotropin, Its Subunits, and Fragments by Cultured Human Cancer Cells. Cancer. 01 April 1992, Vol. 69, No. 7, pages 1829-1842, see full document.	1-66
A	HOERMANN, R. et al. Molecular Heterogeneity of Human Chorionic Gonadotropin in Serum and Urine From Patients with Trophoblastic Tumors. Clinical Investigation. 1993, Vol. 71, pages 953-960, especially pages 958-959.	1-66

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US00/13197

A. CLASSIFICATION OF SUBJECT MATTER:

IPC (7):

C12Q 1/68, 1/70; G01N 21/64, 33/00, 33/53, 33/531, 33/533, 33/543; C07H 21/02, 21/04; C12N 15/00; B05D 1/18; B01J 13/00

A. CLASSIFICATION OF SUBJECT MATTER:

US CL :

435/5, 6, 7, 7.21, 7.9, 91.1, 91.2, 94, 183, 270; 436/501, 504, 508, 518, 808, 811; 536/23.1, 24.3, 24.31, 24.32, 25.32; 935/1, 2, 3, 5, 8, 19, 76, 77, 78, 85, 111; 530/300, 350, 387.1, 388.1, 388.2, 391.1, 811, 812, 815;

B. FIELDS SEARCHED

Minimum documentation searched

Classification System: U.S.

435/5, 6, 7, 7.21, 7.9, 91.1, 91.2, 94, 183, 270; 436/501, 504, 508, 518, 808, 811; 536/23.1, 24.3, 24.31, 24.32, 25.32; 935/1, 2, 3, 5, 8, 19, 76, 77, 78, 85, 111; 530/300, 350, 387.1, 388.1, 388.2, 391.1, 811, 812, 815;